

WPF PUZZLE GP 2018

INSTRUCTION BOOKLET

Host Country: Switzerland

Markus Roth, Roger Kohler, Esther Naef

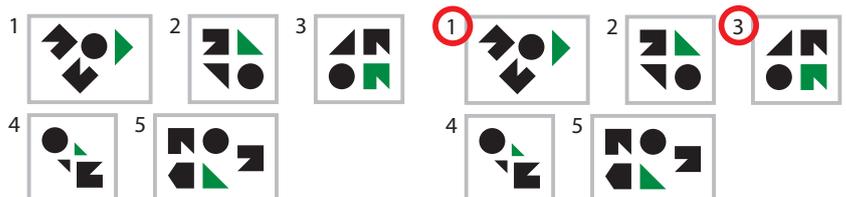
Special Notes: "CH" is short for "Confoederatio Helvetica", the Latin name for Switzerland, and appears in many of these puzzles as a theme, as well as the Swiss cross. There is no puzzle-significance to the appearance of this theme.

Points:

1.	Find the Matching Sets	1	15.	Tic-Tac-Logic	36
2.	Find the Matching Sets	6	16.	Tic-Tac-Logic	38
3.	Column Dance	7	17.	Myopia	34
4.	Column Dance	17	18.	Myopia	37
5.	Arithmetic Square	9	19.	Doppelblock	19
6.	Arithmetic Square	18	20.	Doppelblock	39
7.	Shortest Distances	37	21.	Rook Hidato	16
8.	Password Path	17	22.	Rook Hidato	42
9.	Password Path	16	23.	Snaky Station Loop	20
10.	Battleships	20	24.	Snaky Station Loop	20
11.	Battleships	21	25.	Encrypted Hashiwokakero	26
12.	Battleships	10	26.	Encrypted Hashiwokakero	40
13.	Four Winds	13	27.	Character Battle	19
14.	Four Winds	20	28.	Character Battle	46
				TOTAL:	644

1-2. Find the Matching Sets [Markus Roth] (1, 6 points)

Identify two boxes that contain exactly the same symbols. Symbols are considered the same if they have the same size and same shape (ignore differences due to reflections, rotations, color, and location).



Answer: Enter the two numbers corresponding to the two matching boxes, the smaller number first.

Example Answer: 13

3-4. Column Dance [Markus Roth] (7, 17 points)

Remove some columns so that there is exactly one symbol in each row.

Any difference between the symbols or cell lines are purely for decorative purposes.

Answer: Enter the letters above the non-removed columns, from left to right.

Example Answer: BDF

A	B	C	D	E	F	G	H
	○			○		○	
○			○				
		○			○	○	
	○	○		○			○
○				○	○		
			○			○	○

A	B	C	D	E	F	G	H
	○						
			○				
					○		
	○						○
							○
			○				

5-6. Arithmetic Square [Markus Roth] (9, 18 points)

Place the numbers from 1 to 9 into the cells (a different single number in each cell) so that the indicated equations/relations are correct. Evaluate from left-to-right and top-to-bottom (ignore the usual precedence of the operators).

It is possible for expressions and partial expressions to be negative or non-integral.

Answer: For each designated row, enter the contents of the cells, in order from left to right.

Example Answer: 987, 643, 521

$\rightarrow \begin{array}{c} \boxed{} + \boxed{} + \boxed{} > 23 \\ + \quad - \quad + \end{array}$	$\rightarrow \begin{array}{c} \boxed{9} + \boxed{8} + \boxed{7} > 23 \\ + \quad - \quad + \end{array}$
$\rightarrow \begin{array}{c} \boxed{} \times \boxed{} \div \boxed{} = 8 \\ \times \quad \times \quad - \end{array}$	$\rightarrow \begin{array}{c} \boxed{6} \times \boxed{4} \div \boxed{3} = 8 \\ \times \quad \times \quad - \end{array}$
$\rightarrow \begin{array}{c} \boxed{} \times \boxed{} + \boxed{} = 11 \\ = \quad = \quad = \\ 75 \quad 8 \quad 9 \end{array}$	$\rightarrow \begin{array}{c} \boxed{5} \times \boxed{2} + \boxed{1} = 11 \\ = \quad = \quad = \\ 75 \quad 8 \quad 9 \end{array}$

7. Shortest Distances [Esther Naef] (37 points)

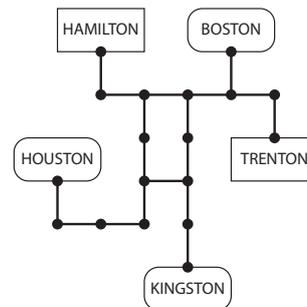
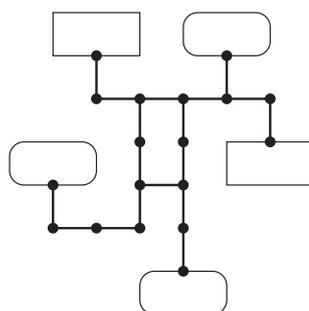
Some dots on the map are labeled with signs. Put the list of given names onto the signs, a single different name on each sign, such that the provided distances between names are accurate. Distances are measured by the shortest path that follows the black lines between dots; a black line between dots is one unit.

The difference between signs with rounded corners and sharp corners is only used for entering your answer. Any artwork behind the grid is purely for decorative purposes.

Answer: Enter the first letter on each sign with rounded corners, from left to right.

Example Answer: HKKB

BOSTON, HAMILTON, HOUSTON,
KINGSTON, TRENTON



- 6: HAMILTON–TRENTON
- 7: HAMILTON–KINGSTON
- 7: HOUSTON–KINGSTON
- 10: HOUSTON–TRENTON

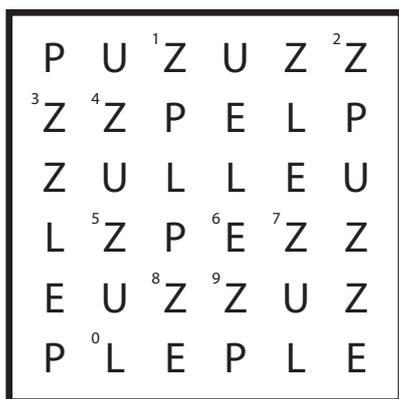
8-9. Password Path [Markus Roth] (17, 16 points)

Find a path that starts in the upper-left letter and ends in the lower-right letter, that goes through each letter once and repeats only the password (given below the grid). The path may only travel in the eight standard directions and may *not* intersect itself.

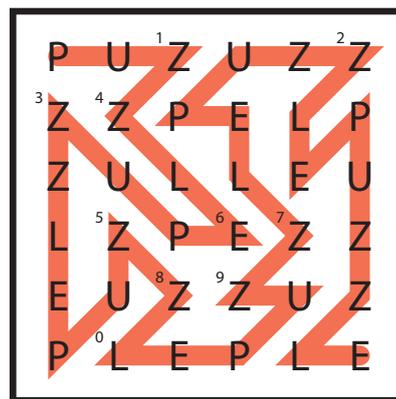
The small digits are only used for entering your answer.

Answer: Enter the order in which the digits appear on the path.

Example Answer: 1463580972



PUZZLE



PUZZLE

10-12. Battleships [Markus Roth] (20, 21, 10 points)

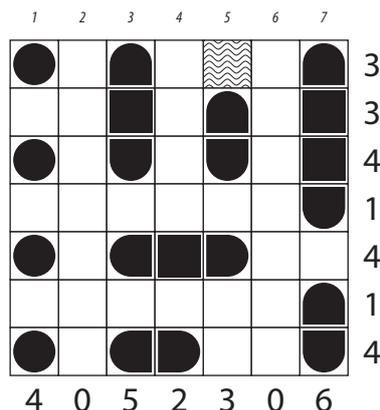
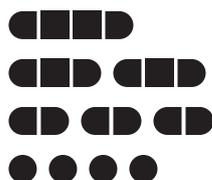
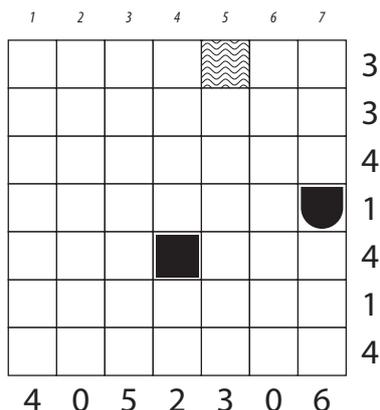
Locate the indicated fleet in the grid. Each piece of a ship occupies a single cell. A cell that does not contain a ship piece is considered "sea". Ships can be rotated. Ships do not touch each other, not even diagonally (that is, if two ship pieces are in adjacent cells, they must be part of the same ship). The contents of some cells are given for you.

Each number to the right and bottom of the grid reveals the number of ship pieces that must be located in that row or column (including any that might be given for you).

The numbers on top of the diagram are for Answer purposes only.

Answer: For each row from top to bottom, enter the number of the first column from the left where a ship piece appears (the number on top of that column). Use only the last digit for two-digit numbers; e.g., use '0' if the first ship piece appears in column 10. If the row is empty, enter '0'.

Example Answer: 1317171



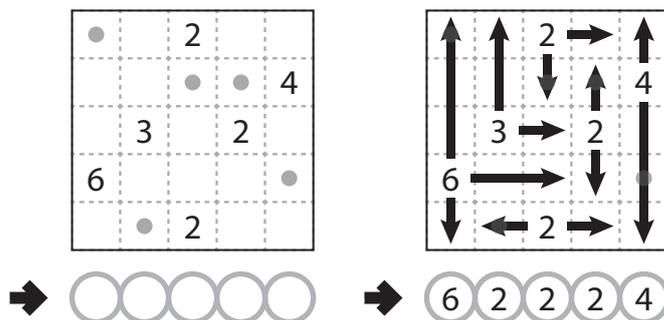
13-14. Four Winds [Roger Kohler] (13, 20 points)

Draw arrows in the empty cells in the grid. Arrows can only go in the four standard directions and must begin at the edge of a cell with a number. Each empty cell must be covered by exactly one arrow. Each number indicates the total length of all the arrows that begin at an edge next to that number's cell.

The dots in cells are only used for entering your answers.

Answer: Enter the number whose arrow covers the dot, reading the dots from left to right. (Ignore which row the dots are in.) Use only the last digit for two-digit numbers; e.g., use '0' for a number labeled 10.

Example Answer: 62224

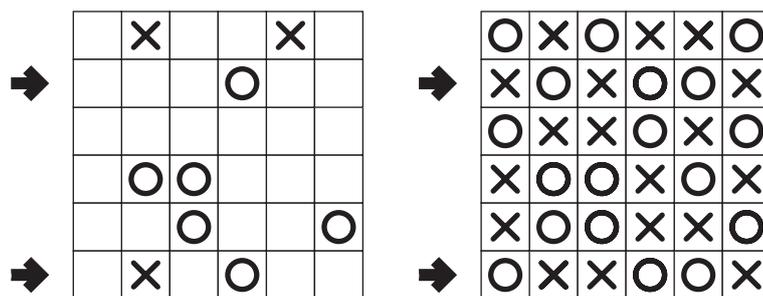


15-16. Tic-Tac-Logic [Markus Roth] (36, 38 points)

Place a circle or a cross into each empty cell, one symbol per cell, such that each row and column has an equal number of circles and crosses and no row or column has three consecutive cells with the same symbol. (It is permissible for three cells along a diagonal to have the same symbol.) Additionally, all rows must have a different pattern of symbols and all columns must have a different pattern of symbols (it is permissible for a row to have the same pattern as a column). Some cells have already been filled for you.

Answer: For each designated row, enter its contents. Use O for a cell occupied by a circle and X for a cell occupied by a cross.

Example Answer: XOXOOX, OXXOOX

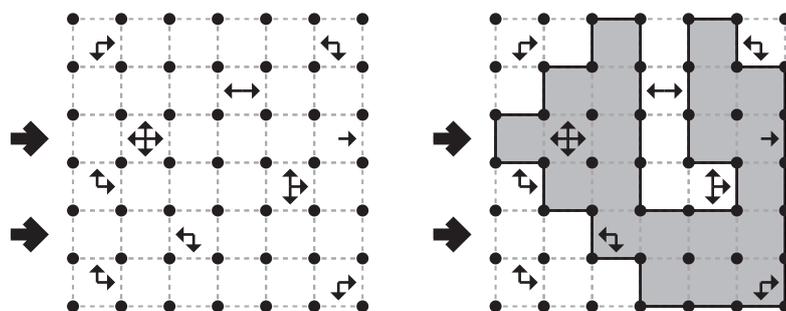


17-18. Myopia [Roger Kohler] (34, 37 points)

Draw a single, non-intersecting loop that only consists of orthogonal line segments between the dots. Arrows in a cell indicate all closest loop edges to that cell along the four orthogonal directions (if there are multiple loop edges of the same closest distance to the cell, there will be multiple arrows).

Answer: For each designated row, enter the lengths (number of cells) of each segment of cells inside the loop, from left to right. Use only the last digit for two digit numbers; e.g., use '0' for a segment of length 10. If there are no cells inside the loop for a row, enter the single digit '0'.

Example Answer: 32, 4



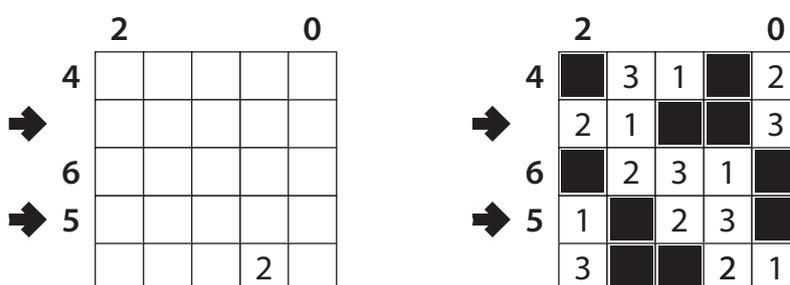


19-20. Doppelblock [Markus Roth] (19, 39 points)

Place either a block or a number from 1 to X (integers only) into each cell so that each number appears exactly once in each row and each column. (X is two fewer than the number of cells in each row.) Each row and each column will therefore have exactly two cells with blocks in them. The numbers outside the grid indicate the sum of the numbers between the two blocks in that row or column. Some cells may already be filled in for you.

Answer: For each designated row, enter its contents from left to right. Use 'X' to denote a block. Use only the last digit for two digit numbers; e.g., use '0' for the number 10.

Example Answer: 21XX3, 1X23X



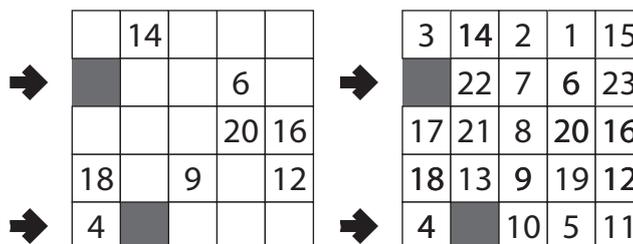
21-22. Rook Hidato [Markus Roth] (16, 42 points)

Place a number from 1 to X (integers only) into each cell so that each number appears exactly once. (X is the total number of cells; grey areas are not cells.) Consecutive numbers (numbers that differ by 1) must be in the same row or column. If three consecutive numbers are in the same row or column, then the middle number must be between the other two. Some cells may already be filled in for you.

(In other words, the numbers represent the path of a chess rook that lands on every cell and never reverses direction.)

Answer: For each designated row, enter its contents from left to right. Use only the last digit for two digit numbers; e.g., use '0' for the number 10.

Example Answer: 2763, 4051



23-24. Snaky Station Loop [Roger Kohler] (20, 20 points)

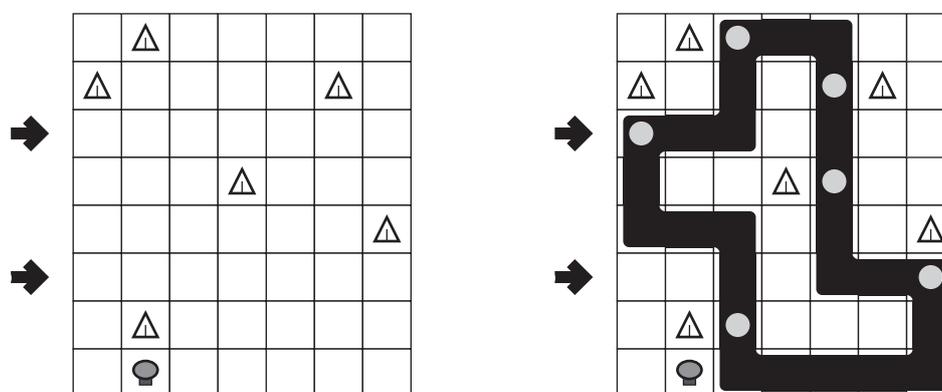
Locate a "snaky loop" in the grid; it goes through some number of cells orthogonally and comes back to itself. Each cell is used at most once by the loop. The loop may not touch itself, not even diagonally. (In other words, if two cells in the loop touch orthogonally, then they must be exactly one cell apart along the path of the loop, and if two cells in the loop touch diagonally, then they must be exactly two cells apart along the path of the loop.)

Each tent is orthogonally adjacent to exactly one cell of the loop (representing a "station"). Stations may not be adjacent to each other, not even diagonally. Tents may not share stations.

The loop may not go through any cell containing a tree.

Answer: For each designated row, enter its contents. Use ○ for a cell occupied by the snake and × for a cell not occupied by the snake. (If you wish, you may reverse ○ and ×, but you must be consistent within the same puzzle.)

Example Answer: ○○○×××, ××○×○○○ (or ×××○×○○, ○○○××××)



25-26. Encrypted Hashiwokakero [Roger Kohler] (26, 40 points)

Draw some horizontal and vertical lines so that all the circles are connected (directly or through connections through other circles). No two circles may be directly connected by more than two lines. Lines may not cross other lines. If a circle is numbered, then that number represents the number of lines that are connected to that circle.

The numbers have been encrypted into letters before being given to you; same letters always stand for the same number, and different letters always stand for different numbers.

The dots in cells are only used for entering your answers.

Answer: Enter the number of lines that cross each dot, reading the dots from left to right. (Ignore which row the dots are in.)

Example Answer: 220102

